

EZM 9910 96X96 DIN1/4 Programmable Single Axis Readout

- *6 digit actual display*
- *Reset and ChA-ChB counter inputs*
- *Selectable NPN/PNP input types*
- *Inc x1 / x2 / x4 (with encoder) type of counting,*
- *Coefficient and decimal point position*
- *INCH / METRIC Transformation*
- *Optional serial communication, RS-232 or RS-485*

Instruction Manual

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EU DECLARATION OF CONFORMITY

Manufacturer's Name : EMKO ELEKTRONIK A.S.
Manufacturer's Address : DOSAB, Karanfil Sk., No 6,
16369 Bursa, TURKEY

The manufacturer hereby declares that the product:

Product Name : Programmable Single Axis Readout
Model Number : EZM-9910
Type Number : EZM-9910
Product Category : Electrical equipment for measurement,
control and laboratory use

Conforms to the following directives:

73 / 23 / EEC The Low Voltage Directive as amended by 93 / 68 / EEC

89 / 336 / EEC The Electromagnetic Compatibility Directive

has been designed and manufactured to the following specifications:

EN 50081-2 EMC Generic Emission Standard for the Industrial Environment

EN 50082-2 EMC Generic Immunity Standard for the Industrial Environment

EN 61010-1 Safety Requirements for electrical equipment for measurement, control and laboratory use

Please read the following information before using and thank you very much for buying Emko' s product.

The safety requirements are classified as either “warning“ and “caution” according to the following explanations:

† **WARNING:** Suggest that the user' s mishandling can results in personal death or serious injury.

† **CAUTION:** Suggest that the user' s mishandling can results in personal injury or damage to the property.

Pack List:

- 1- One piece unit.
- 2- Two pieces fixing clamps.
- 3- One piece “user manual”.

1 INTRODUCTION:

EZM series single axis readout can be used safety, cloth quality control, sheet iron process machines and all measuring, dimension and controlling of your system's needed and can be adapted easily to all mechanical construction and automation systems.

1.1 MODEL CODE:

EZM-9910 (96x96 DIN 1/4)	A	BC	D	E	/	FG	HI	/	U	V	W	Z
		00		0	/	00	00	/	0		0	0

A Supply Voltage	
1	100-240Vac 50/60Hz
2	24Vdc, Vac 50/60 Hz
9	Customer

D Serial Interface	
0	Non
1	RS-232
2	RS-485

E Output-1	
0	Non

V Input Type	
0	NPN
1	PNP

2 INSTALLATION:

† WARNING:

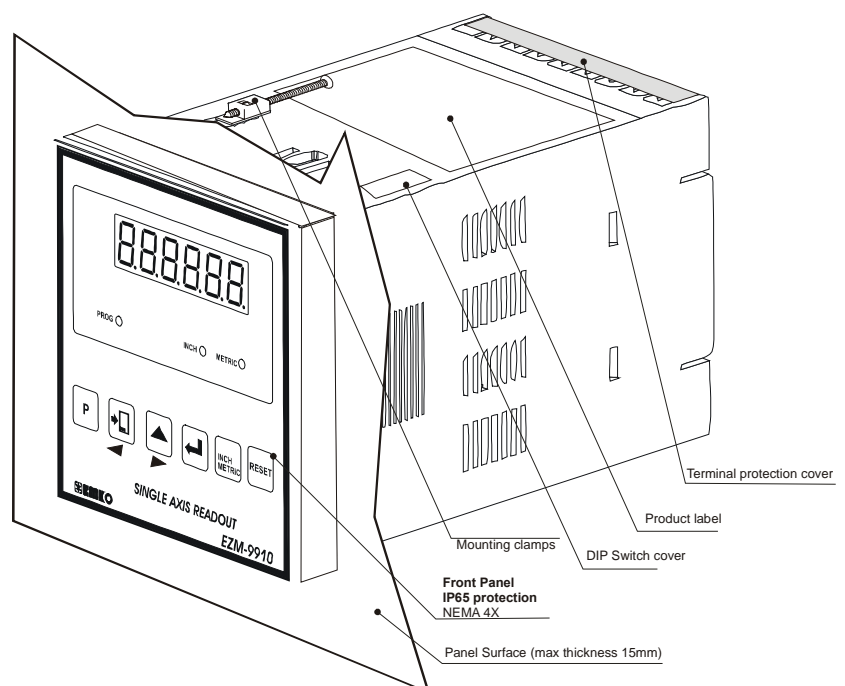
1. A visual inspection of this product for possible damage occurred during shipment is recommended before installation. It is your responsibility to ensure that qualified mechanical and electrical technicians install this product.
2. If there is danger of serious accident resulting from a failure or defect in this unit, provide the unit with an appropriate external protective circuit to prevent an accident.
3. The unit is normally supplied without a power switch or a fuse. Use power switch and fuse as required (fuse rating is 1A@250VAC)
4. Be sure to use the rated power supply voltage to protect the unit against damage and to prevent failure.
5. Keep the power off until all of the wiring is completed so that electric shock and trouble with the unit can be prevented.
6. Never attempt to disassemble, modify, or repair this unit. Tampering with the unit may results in malfunction, electric shock, or fire.
7. Do not use the unit in combustible or explosive gaseous atmospheres.
8. During the equipment is putted in hole on the metal panel while mechanical installation some metal burrs can cause injury on hands, you should be careful. Installation parts of equipment should be tighten properly. The equipment can be drop from mounting place reason of vibration if installation parts leave soft.

† WARNING: Before beginning installation of this product:

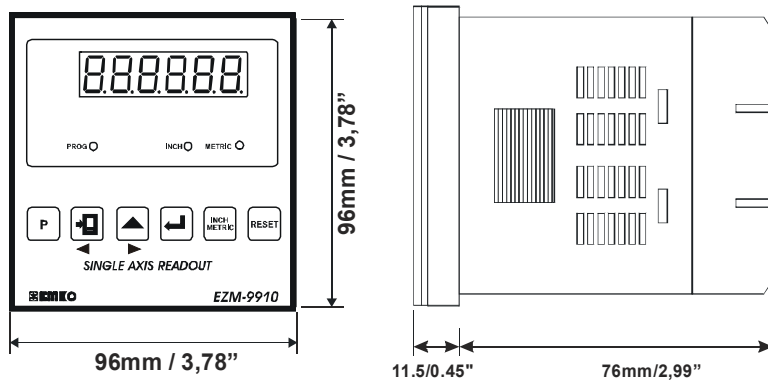
- Disconnect all electrical power to the machine.
- Make sure the machine cannot operate during installation.
- Follow all safety warnings of the machine manufacturer.

Read and follow all installation instructions.

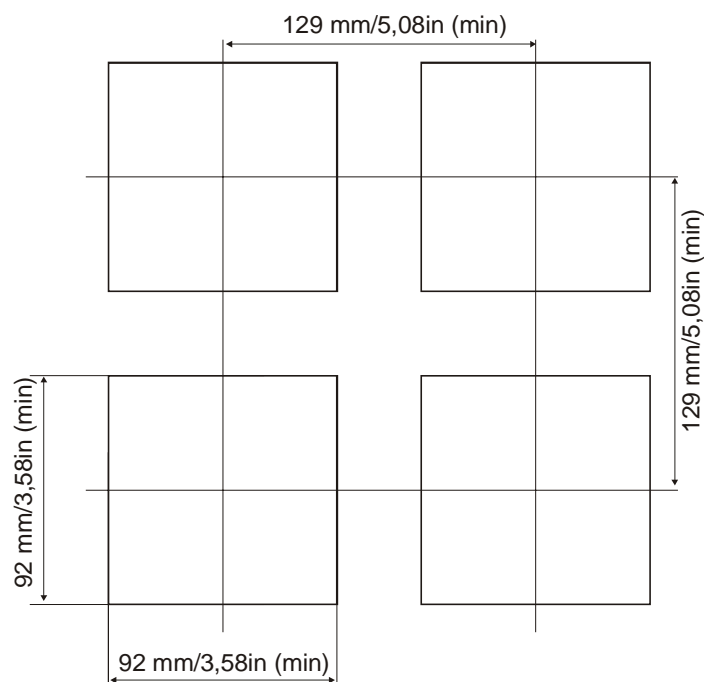
2.1 General Description:



2.2 Dimensions:



2.3 Panel Cut-Out:



2.4 Environmental Ratings:

Operating Conditions:

Operating temperature	: -5 ... +55°C
Maximum operating humidity	: 90% Rh (non-condensing)
Altitude	: Up to 2000 m.

† **CAUTION:**

Forbidden Conditions:

Corrosive atmosphere

Explosive atmosphere

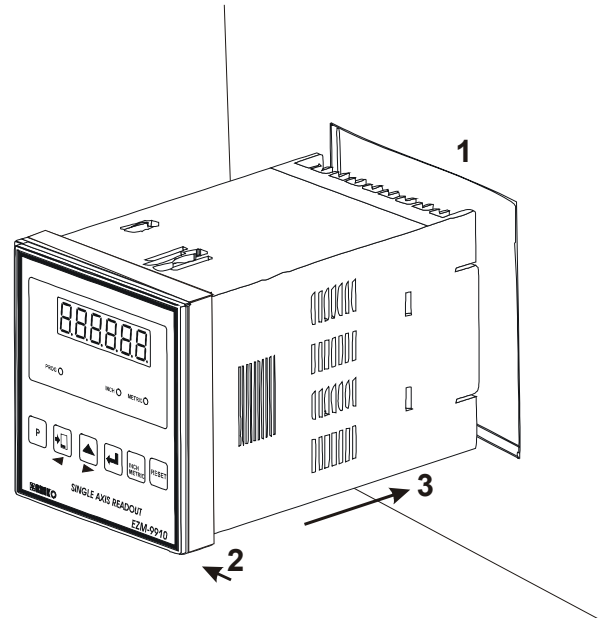
Home application (The unit is only for industrial applications)

2.5 Panel Mounting:

Insert To Panel:

† **WARNING:** During the equipment is putted in hole on the metal panel while mechanical installation some metal burrs can cause injury on hands, you should be careful. Installation parts of equipment should be tighten properly. The equipment can be drop from mounting place reason of vibration if installation parts leave soft.

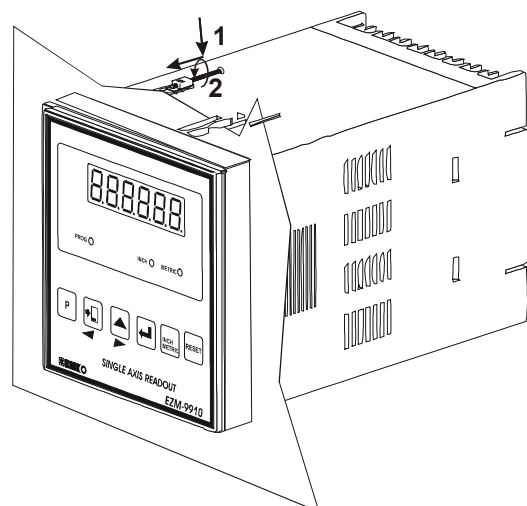
- 1- Prepare panel cut-out.
- 2- Check front panel gasket position.
- 3- Insert the device trough the cut-out.



Installation Fixing Clamp:

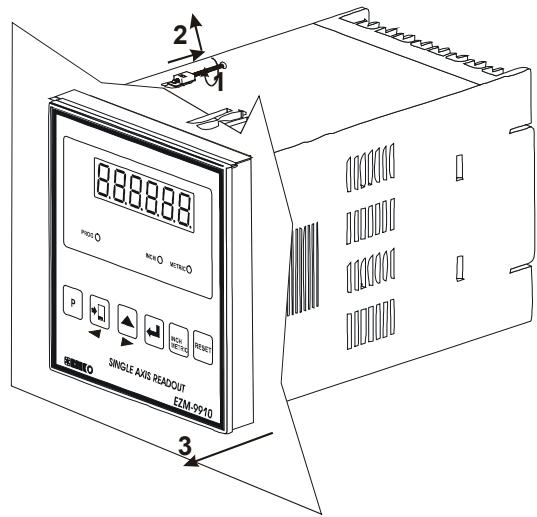
The unit is designed for panel mounting. Fixing is by mounting clamp.

1. Insert the unit in the panel cut-out from the front.
2. Insert the mounting clamp from the rear side of the device and tighten the fixing screws to secure the unit against the panel.



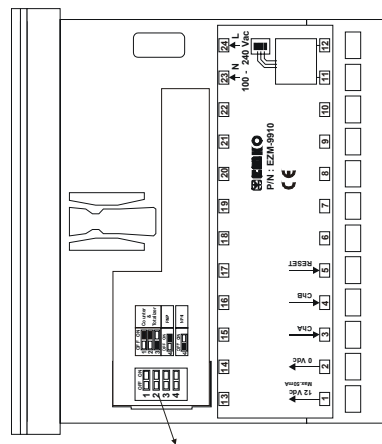
Pulling Fixing Clamp:

- 1- You can unscrew to screws.
- 2- Pull the mounting clamp by screw driver from the front side of the device.
- 3- Pull the unit in the panel cut-out.



2.6 Operating Function Selection by DIP Switches:

⚠ CAUTION: You can select to operating function and input type (PNP or NPN) by DIP Switch on the device.



DIP Switches are under the cover and cover is on top side of the device.

Function Selection: Input Type Selection

OFF ON 4 <input type="checkbox"/> <input type="checkbox"/>	NPN
OFF ON 4 <input type="checkbox"/> <input type="checkbox"/>	PNP

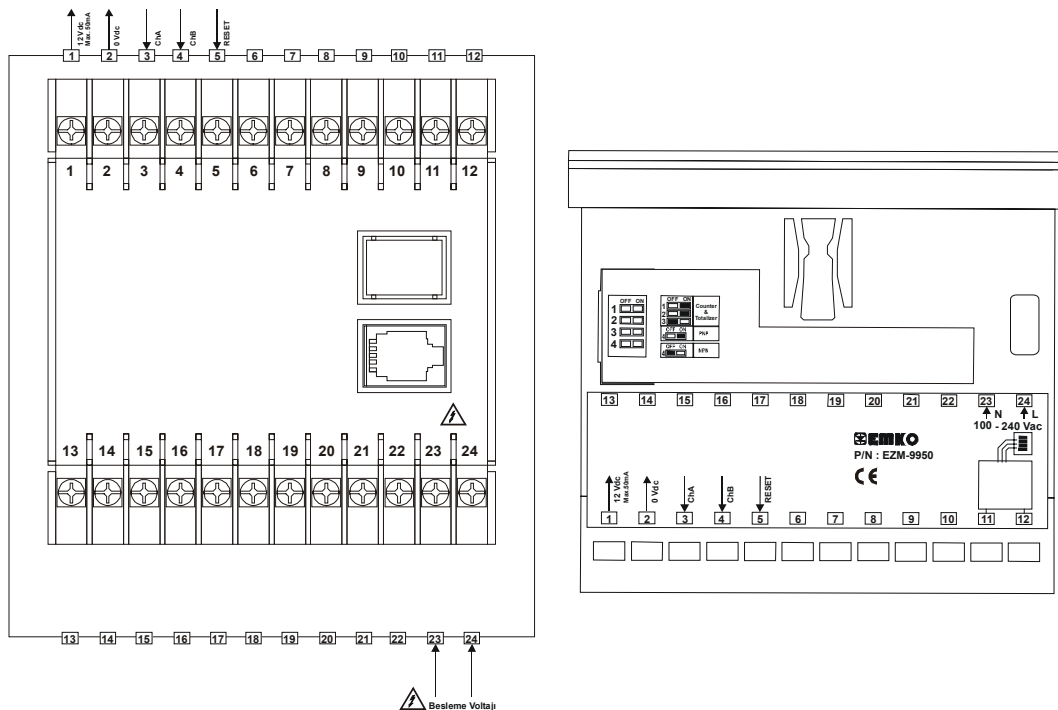
3 ELECTRICAL CONNECTIONS:

⚠ **WARNING:**

You must ensure that the controller is correctly configured for your application. Incorrect configuration could result in damage to the process being controlled, and/or personal injury. It is your responsibility, as the installer, to ensure that the configuration is correct. The controller may either have been configured when ordered, or may need configuring now.

⚠ **WARNING:**

This equipment does not contain any parts and material related to users. Only qualified personnel and technician trained specially should work on this equipment. This equipment contains dangerous voltage inner circuits for human life. There is severe dangerous for human life on the case of unauthorised intervene.



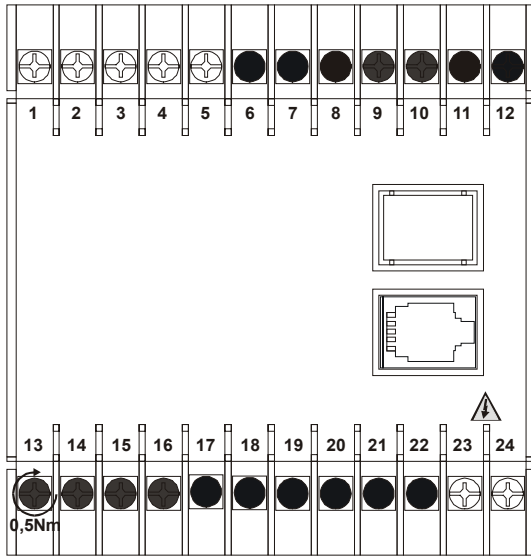
⚠ **WARNING:**

Be sure to use the rated power supply voltage to protect the unit against damage and to prevent failure.

⚠ **WARNING:**

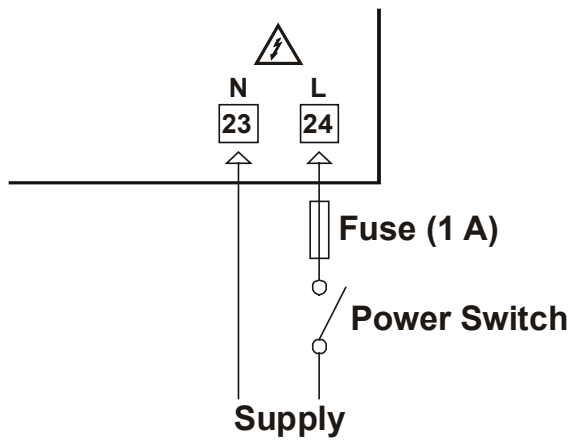
Keep the power off until all of the wiring is completed so that electric shock and trouble with the unit can be prevented.

3.1 Terminal Layout and Connection Instruction:



- 6mm / 0,23in
Wire Size:
18AWG/1mm²
Solid/Stranded
- 12 screw terminal M3
- Option terminals
- Empty terminals
- Holding screw 0,5Nm
- Screw driver 0,8x3mm

3.2 Power Supply:



Switching power supply with multiple isolation

High voltage version:

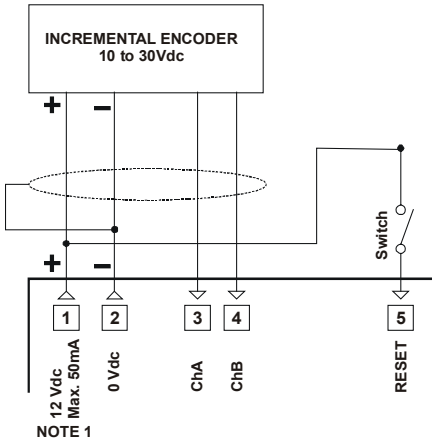
100 to 240 Vac, frequency 50 / 60Hz.

Low voltage version:

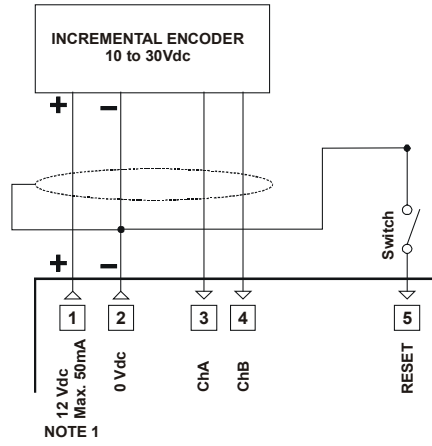
24 Vdc/Vac, frequency 50 / 60Hz.

3.3 Inputs:

DIP SWITCH SETTING : PNP
Incremental Encoder & switch connection

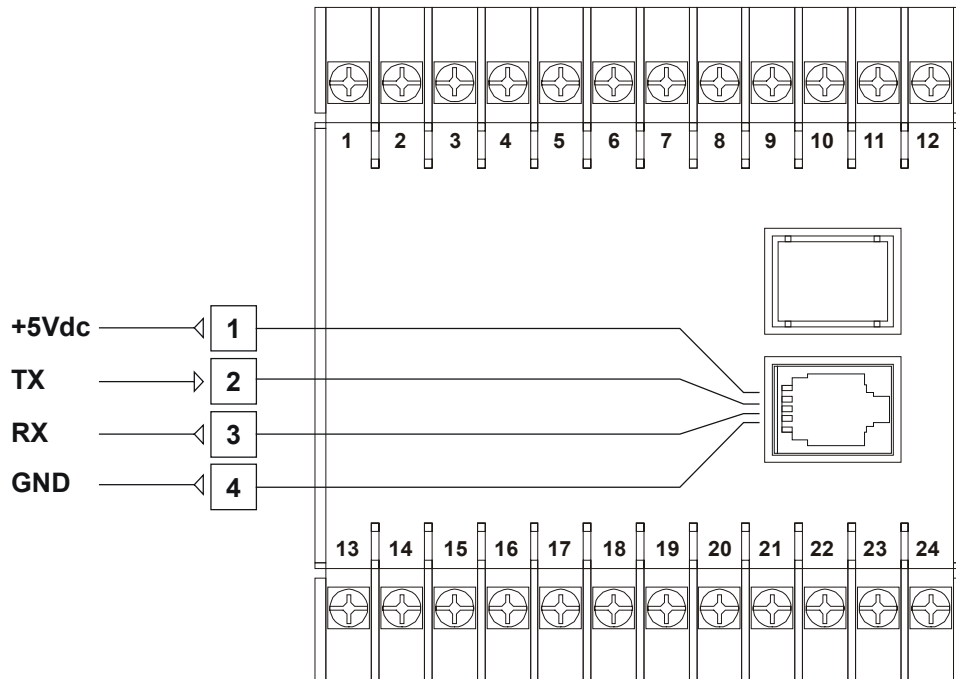


DIP SWITCH SETTING : NPN
Incremental Encoder & switch connection



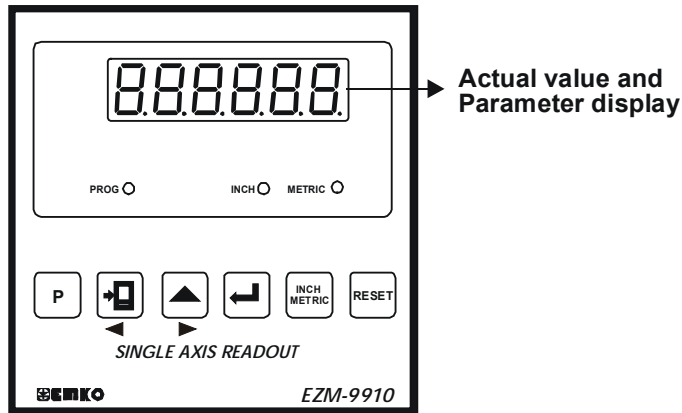
NOTE 1:
Auxiliary power supply for external transmitter
12Vdc $\pm 10\%$ / 50mA max with short circuit protection

RS - 232 Serial Communication Interface



Operating Manual

4 Front Panel Description:

















Prog	Prog led is illuminated when the enter to programme mode.
Inch	Inch led is illuminated when the measumerent value selected as inch.
Metric	Metric led is illuminated when the measumerent value selected as metric.

	This button is used for entering the program mode.
	This button is used for shifting cursor position on the programming mode, accessing for between parameters and setting of set values.
	It changes the flashing display value, from 0 to 9 and it is used accessing for between parameters in the programming mode (up side).
	This button is used for saving the memory of changed parameter values when the device on program mode.
	This button is used for selection of measurement value as inch or metric. Hold during the 3 sec. transformation for Inch/metric.
	This button is used for displaying of Mechanical reset value on the "Actual Value Display".











4.1 Program Parametreleri:

PRO-01	Input Type Selection 0- 1 x Incremental encoder counting 1- 2 x Incremental encoder counting 2- 4 x Incremental encoder counting											
PRO-02	Calibration Type Selection 0- Parametric (one point calibration) 1- Two point calibration 2- Coefficient calibration											
PRO-03	Encoder Type 0-1000											
PRO-04	Hatve 0-500											
PRO-05	Min. Value for dual point calibration -9999 - 999999											
PRO-06	Max. Value for dual point calibration -9999 - 999999											
PRO-07	Coefficient 00.0001 – 99.9999											
PRO-08	Decimal Point Position: This selection is described of decimal point position on the display.											
	<table border="0"> <tr> <td>Metric</td> <td>Inch</td> </tr> <tr> <td>0 - 000000</td> <td>1 - 00000.0</td> </tr> <tr> <td>1 - 00000.0</td> <td>2 - 0000.00</td> </tr> <tr> <td>2 - 0000.00</td> <td>3 - 000.000</td> </tr> <tr> <td>3 - 000.000</td> <td>4 - 00.0000</td> </tr> <tr> <td>4 - 00.0000</td> <td>5 - 0.00000</td> </tr> </table>	Metric	Inch	0 - 000000	1 - 00000.0	1 - 00000.0	2 - 0000.00	2 - 0000.00	3 - 000.000	3 - 000.000	4 - 00.0000	4 - 00.0000
Metric	Inch											
0 - 000000	1 - 00000.0											
1 - 00000.0	2 - 0000.00											
2 - 0000.00	3 - 000.000											
3 - 000.000	4 - 00.0000											
4 - 00.0000	5 - 0.00000											
PRO-09	It's determinates, actual value on the display saved or unsaved to memory when the energy breaking. 0 - Saved to memory the actual value 1 - Unsaved to memory the actual value											
PRO-10	Protection selection for reset button 0 - Reset button protection is deactive 1 - Reset button protection is active											
PRO-ps	Password (000000 – 009999)											








4.2 Observing and changing parameter values:

Entering for programme parameter hold  button during the 5 seconds, Psuurd message is shown on display and PROG led is illuminated finally of this time. When the pressed  button "0000" password value is shown and flashes the lefter digit. Standart password 2111 or (Pro-PS) password parameter value that has been set is entered by  and  buttons (digit can be selected by  button and can be changed digit's value by  button) When the pressed  button Pro-1 message is shown on the display if password is true. On this position if is pressed  button following programme parameter, if is pressed  button preceding programme parameter is observed. On this position the parameter that will be changed is selected and is pressed  button, after setting new value by  and  buttons is pressed  button and new value saved on the memory. At this moment if is pressed  button new set value don't save on memory and exits from programme mode





4.3 Two Point Calibration:

Entering for programme parameter hold  button during the 5 seconds, select the Pro-2 parameter and set this parameter value as “1” and press the  button, Pro-2 parameter is shown again on the display, at this moment if is pressed  button Pro-5 message is shown and accesses axis lower point starting value by pressing  button. 0 value is set by using  and  buttons and is pressed to  button for saving on memory the lower point value. When the pressed  button Pro-6 message is shown and accesses axis upper point value by pressing  button. Last point on the operation axis is described (moving by encoder) and is pressed  button for saving on memory the upper point.

4.4 Coefficient:

Entering for programme parameter hold  button during the 5 seconds, select the Pro-2 parameter value as “2” and press the  button, Pro-2 parameter is shown again on the display, at this moment if is pressed  button Pro-7 message is shown and accesses coefficient value by pressing  button. New value is set by using  and  and is pressed to  button for saving on memory the coefficient value.

4.5 Setting Of Mechanic Reset Value:

When the pressed RESET button mechanic reset value is shown on display and flashes lefter digit, in this position new value is set by using  and  buttons and is pressed to  button for saving on memory the mechanic reset value. At this moment if is pressed  button new mechanic reset value don't save on memory and exits from programme mode.

4.6 Mechanic Reset:

Hold the RESET button during the 10 seconds at the end of this time RESET message is shown on display and device is resetted.

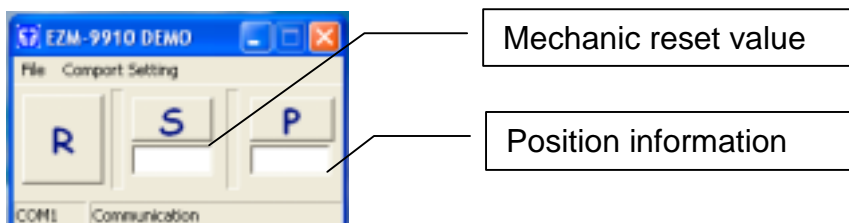
4.7 Serial Communication:

Device has optional RS-232 serial communication property.

Mechanic reset value is observing when the pressed R button on the PC .

If is set a value between -999999 to 999999 and is pressed S button, device accept this value as new mechanic reset value.

Device is transmit position information by PC when the pressed P button.



TECHNICAL SPECIFICATIONS:

TECHNICAL SPECIFICATIONS AND RATINGS

Equipment use	: Single axis readout
Housing & Mounting	: 96mm x 96mm x 86mm 1/4 DIN 43700 Plastic housing for panel mounting. Panel cut out is 92mm x 92mm.
Protection	: NEMA 4X (IP65 at front, IP20 at rear).
Weight	: Approximately 0.34 Kg.
Environmental rating	: Standard, indoor at an altitude of less than 2000 meters with non condensing humidity
Operating / Storage temperature	: -5 °C to +55 °C / -40 °C to +85 °C
Operating / Storage humidity	: 90 % max. (non condensing)
Installation overvoltage category	: III, Distribution level, fixed installation category
Pollution degree	: II, Normal office or workplace, non conductive pollution
Mode of operation	: Continuous
Supply voltage	: 100 to 240 VAC 50/60 Hz. 24 VDC/VAC 50/60 Hz.
Actual Counting Value Display	: 14 mm Red 6 digit LED display
LED indicators	: Prog (Program mod), Inch (Inch measurement), Metrich (Metrich measurement) LEDs

WARRANTY:

We warrant that the products will be free from defects in material and workmanship for 2 years from the date of bill.

The warranty above shall not apply for any failure caused by the use of the product not in line with the instructions reported on this manual.